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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,115	03/05/2002	Matthew Dunn		5153

7590 04/27/2004

Attention: Thomas A. O'Rourke  
Wyatt, Gerber & O'Rourke  
99 Park Avenue  
New York, NY 10016

EXAMINER

FLANIGAN, ALLEN J

ART UNIT PAPER NUMBER

3753

DATE MAILED: 04/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/091,115	<b>Applicant(s)</b> DUNN, MATTHEW	
	<b>Examiner</b> Allen J. Flanigan	<b>Art Unit</b> 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2/19/2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10,11 and 18 is/are allowed.
- 6) ☒ Claim(s) 1-9,12-17 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The specification is objected to because the description of the invention contains statements that are misleading or simply incorrect. Applicant attempts to apply a concept (fin efficiency) that is inapplicable to the instant invention, because the applicant's invention has nothing which can be considered a fin. The invention is basically an indirect heat exchanger with separating surfaces, but no fins present (cf the heat exchanger of Grill et al., showing applicants' corrugated member 2 defining fluid separating walls, and added corrugated fins 13). It is thus meaningless and misleading to claim "fin efficiency" at unity where no fins are employed. Further, the statement that "the application of the present invention is independent of the convection coefficient and related terms" appears to be incorrect, in implying that the efficiency of the disclosed heat exchanger is not a function of the ordinary factors affecting convective heat transfer efficiency, such as fluid velocity, surface roughness, mixing, *etc.* No fluid heat exchanger is "independent" of convective coefficients.

Please see the comments made in regard to the above rejection in the previous Office action.

Claims 14-17 are rejected under 35 U.S.C. 112, first paragraph, for the reasons given above in the objection to the specification.

Regarding claims 16 and 17, the applicant's invention clearly fails to eliminate all "conductive heat transfer losses". For one thing, the separating corrugated member is not a perfect conductor of heat, regardless of how thin it is, and will experience a small but nonzero conductive loss as heat is transmitted across its thickness. Further, the sidewalls of the applicant's invention will also conduct heat to some degree, and lose such heat, which might have otherwise been transferred.

Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to claim 19, the recitation "wherein said cold air is relevant from said heat exchanger" is not understood.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 12-17, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Fisher.

Please see the comments made in regard to the above rejection in the previous Office action. The recitation at the end of claim 19 is a statement of intended use that carries no structural weight.

Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Grill.

Please see the comments made in regard to the above rejection in the previous Office action.

Applicant's arguments filed 2/19/2004 have been fully considered but they are not persuasive.

In regard to the objection to the specification, the Examiner's position is based on the disclosed invention structure as shown in Fig. 4. The applicant's traversal in the "remarks" section is based on the conventional "fin plate" structure shown in Fig. 3. Applicants actually admit that their invention has no fins in the remarks ("increased efficiency is realized by eliminating the tall effective fin extending from the conduction medium between the apposing fluid flows"), thus confirming the Examiner's contention that the invention lacks what those skilled in the art would consider fins (members extending from a surface of a barrier between fluids exchanging heat that project into one of the fluids and effectively increase surface area by conducting heat away from the barrier into the fluid surrounding the fin). As the applicant further admits, the consideration of fin efficiency is eliminated, because there are no fins in the

instant invention. Claiming that the fin efficiency “approaches” unity or 1 misleadingly and incorrectly implies that fins are present in the invention as claimed.

Applicants also apparently admit the existence of conduction losses (“the fact that there is conduction loss thru the thickness of the conduction medium (separator plate) is irrelevant to the effect of eliminating the perpendicular fin”), yet they have not removed the offending language from the claims that asserts that such conductive losses have been eliminated.

The amendments made to claim 1 adding language regarding a “plurality of cold air [and hot air] exits” fails to distinguish over Fisher or Grill. The outlet orifices defined on the end or side faces of the folded core structure of these exchangers are clearly readable on the claimed exits; the plural streams leaving these exits being subsequently combined by the disclosed manifolds.

Claims 10, 11, and 18 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply

is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen J. Flanigan whose telephone number is (703) 308-1015. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Scherbel can be reached on (703) 308-1272. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "allen j. Flanigan". The signature is written in a cursive, flowing style.

Allen J. Flanigan  
Primary Examiner  
Art Unit 3753

AJF